

*Catalogue of  
Recombinant DNA Materials*  
*2nd edition, 1991*

## HOSTS • LIBRARIES • VECTORS • CLONES

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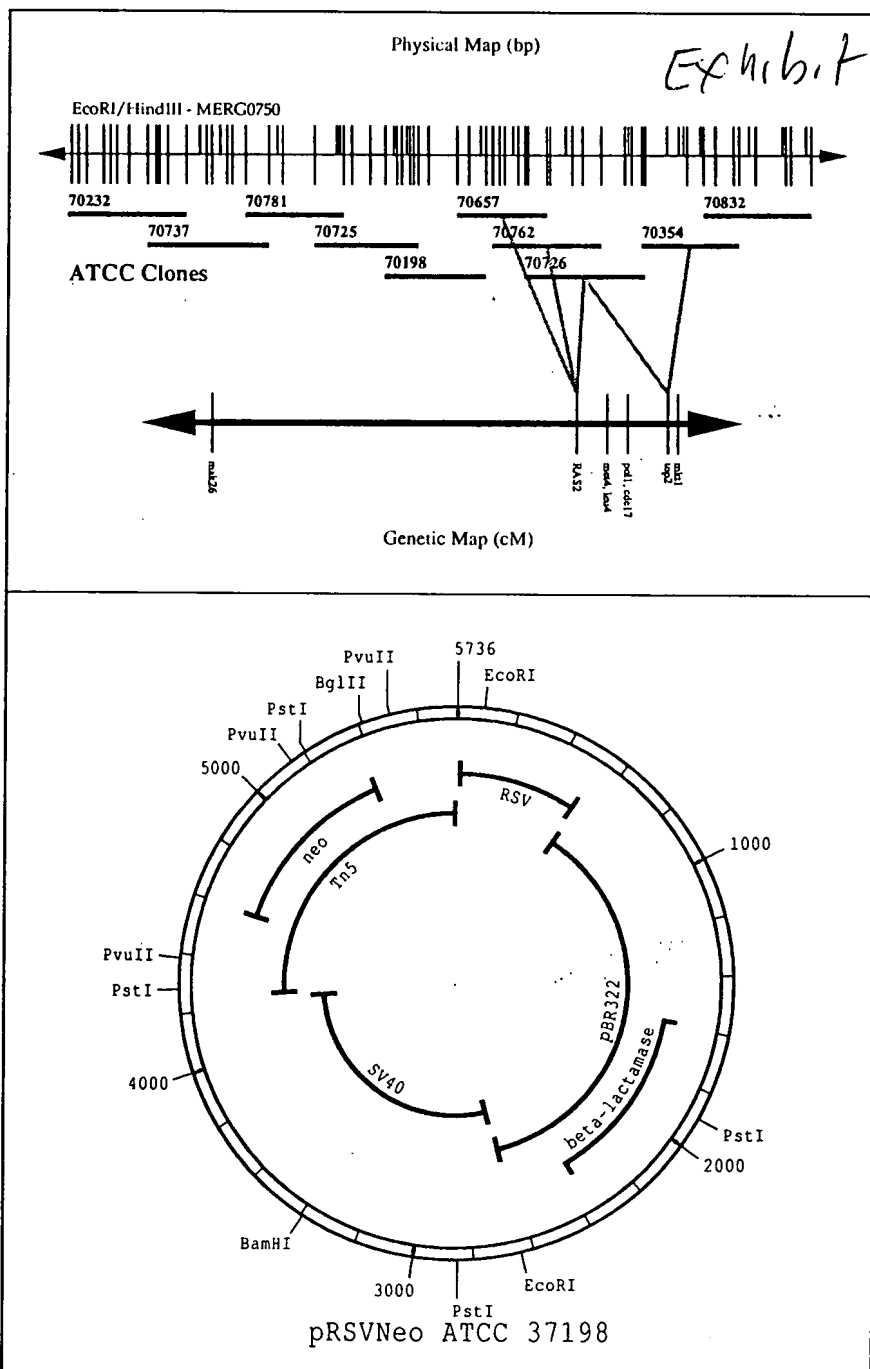
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**American  
Type Culture  
Collection**



- removed. Gene (Amst.) 41: 337-342, 1986. (Medium 1236 37C) **Shipped:** in freeze-dried *Escherichia coli* JM101.
- pBGS131-** (plasmid)  
37445 B.G. Spratt. Construction: pBR322, Tn903, M13tg131, bacteriophage fl ori. Size(kb): 4.4. Marker(s): Kan<sup>r</sup>. Cloning sites: *EcoRI* *SmaI* *SstI* *EcoRV* *SphI* *KpnI* *XbaI* *HindIII* *BamHI* *AccI* *HincII* *SalI* *PstI* *BglII*. Replicon(s): pMB1, fl. Contains MCS. Kanamycin-resistant analog of pEMBL. The duplicate *HindIII*, *SmaI* and *AccI* sites have been removed. Gene (Amst.) 41: 337-342, 1986. (Medium 1236 37C) **Shipped:** in freeze-dried *Escherichia coli* JM101.
- pBLA 11** (plasmid)  
39788 Bio-technology General Corporation. Marker(s): Tet<sup>r</sup>. Promoter(s):  $\lambda$ PL. Contains the ribosomal binding site of the  $\beta$ -lactamase gene. U.S. Patent No. 4,742,004 dated May 3, 1988. Note: This material is cited in a U.S. and/or other Patent and may not be used to infringe the patent claims. (Medium 1273 37C) **Shipped:** in freeze-dried *Escherichia coli*.
- pBLCAT2** (plasmid)  
37527 B. Luckow. Construction: pUC18, SV40, cml, herpes simplex virus tk promoter. Size(kb): 4.5. Marker(s): Amp<sup>r</sup>. Cloning sites: *HindIII* *SphI* (*PstI*) *SalI* *XbaI* *BamHI* *BglII* *XhoI* *Clal* *SmaI* *KpnI* *SstI* (*EcoRI*). Replicon(s): pMB1. Promoter(s): HSV tk. Contains MCS. Developed to simplify construction of hybrid CAT genes. Nucleic Acids Res. 15: 5490, 1987. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli*.
- pBLCAT3** (plasmid)  
37528 B. Luckow. Construction: pUC18, SV40, cml. Size(kb): 4.34. Marker(s): Amp<sup>r</sup>. Cloning sites: *HindIII* *SphI* *PstI* *SalI* *XbaI* *BamHI* *BglII* *XhoI* *Clal* *SmaI* *KpnI* *SstI* (*EcoRI*). Replicon(s): pMB1. Contains MCS. Developed to simplify construction of hybrid CAT genes. Nucleic Acids Res. 15: 5490, 1987. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli*.
- pBR313** (plasmid)  
37018 H. Boyer. Other names: NRRL B-14220. Size(kb): 9.6. Marker(s): Amp<sup>r</sup>, Tet<sup>r</sup>. Cloning sites: *EcoRI* *SmaI* *HpaI* *HindIII* *BamHI* *SalI*. Replicon(s): pMB1. A general purpose plasmid vector. Gene (Amst.) 2: 75-93, 1977. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* RR1.
- pBR322** (plasmid)  
31344 Genentech, Inc. Size(kb): 4.363. Marker(s): Amp<sup>r</sup>, Tet<sup>r</sup>. Cloning sites: *EcoRI* *Clal* *HindIII* *EcoRV* *BamHI* *SphI* *SalI* *XmaI* *NruI* *AvaI* *BalI* *PvuII* *TthI* *NotI* *PstI* *PvuI* *SacI* *AatII*. Replicon(s): pMB1. A general purpose plasmid vector. U.S. Patent No. 4,366,246 dated Dec. 28, 1982; U.S. Patent No. 4,342,832 dated Aug. 3, 1982. Note: This material is cited in a U.S. and/or other Patent and may not be used to infringe the patent claims. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* RR1.
- 37017 Preceptrol® culture. H. Boyer. Construction: pBR313. Size(kb): 4.363. Marker(s): Amp<sup>r</sup>, Tet<sup>r</sup>. Cloning sites: *EcoRI* *Clal* *HindIII* *EcoRV* *BamHI* *SphI* *SalI* *XmaI* *NruI* *AvaI* *BalI* *PvuII* *TthI* *NotI* *PstI* *PvuI* *SacI* *AatII*. Replicon(s): pMB1. A general purpose plasmid vector. Gene (Amst.) 2: 95-113, 1977. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* RR1.
- pBR327** (plasmid)  
37516 E.M. Lederberg. Size(kb): 3.3. Marker(s): Amp<sup>r</sup>, Tet<sup>r</sup>. Cloning sites: *AatII* *AvaI* *Clal* *EcoRI* *HgiEII* *HindIII* *BamHI* *EcoRV* *NruI* *PstI* *PvuI* *SalI* *SacI* *SphI* *XmaI* *XmnI*. Replicon(s): pMB1. A general purpose plasmid vector. Derived from pBR322 by deleting sequences between nt 1430 (*AvaI*) and 2519. The *bom* or *Mob* site has been deleted. Recomb. DNA Tech. Bull. 2: 1980; Nature (Lond.) 283: 216-218, 1980; Gene (Amst.) 13: 25-35, 1981; *ibid.*, 50: 3-40, 1986. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* GM21.
- pBR328** (plasmid)  
37517 E.M. Lederberg. Construction: pBR327 ori, pBR325 cml. Size(kb): 4.9. Marker(s): Amp<sup>r</sup>, Cml<sup>r</sup>, Tet<sup>r</sup>. Cloning sites: *AatII* *AsuII* *AvaI* *Clal* *HgiEII* *HindIII* *TthI* *NotI* *BamHI* *EcoRI* *EcoRV* *BalI* *BamHI* *EcoRI* *EcoRV* *NcoI* *NruI* *PstI* *PvuI* *PvuII* *SalI* *SphI* *XmaI*. Replicon(s): pMB1. A general purpose plasmid vector. Contains a 482 bp inverted duplication. Constructed from the *PstI*/*BamHI* fragment of pBR327 containing the replication origin and the *PstI*/*BamHI* fragment of pBR325 containing the *cml* gene. Gene (Amst.) 9: 287-305, 1980; *ibid.*, 50: 3-40, 1986. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* RR1.
- pBR329** (plasmid)  
37264 R.L. Rodriguez. Construction: pBR327, pBR328 837 bp cml. Size(kb): 4.2. Marker(s): Amp<sup>r</sup>, Cml<sup>r</sup>, Tet<sup>r</sup>. Cloning sites: *AatII* *AsuII* *AvaI* *Clal* *HgiEII* *HindIII* *TthI* *NotI* *BamHI* *EcoRI* *EcoRV* *NcoI* *NruI* *PstI* *PvuI* *PvuII* *SalI* *SphI* *XmaI* *XmnI*. Replicon(s): pMB1. A general purpose plasmid vector. This plasmid does not carry the inverted duplication region found in pBR328. Gene (Amst.) 17: 79-89, 1982; Rodriguez, R.L.; Tait, R.C. Recombinant DNA techniques. Reading, MA: Addison-Wesley; 1983. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* RR1.
- pBRH1** (plasmid)  
37070 R.L. Rodriguez. Construction: pBR316. Size(kb): 7.7. Marker(s): Amp<sup>r</sup>. Cloning sites: *EcoRI*. Replicon(s): pMB1. Promoter cloning plasmid vector using expression of tetracycline resistance for selection. Constructed by inserting an oligonucleotide containing an *EcoRI* site into the *HindIII* site of pBR316, inactivating the *tet* promoter. Rodriguez, R.L.; Denhardt, D.T., eds. Vectors: A survey of molecular cloning vectors and their uses. Boston: Butterworth; 1988:pp. 153-177; Gene (Amst.) 7: 271-288, 1979. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* RR1.
- pBRH3B** (plasmid)  
37072 R.L. Rodriguez. Construction: pBR316. Size(kb): 7.7. Marker(s): Amp<sup>r</sup>. Cloning sites: *EcoRI*. Replicon(s): pMB1. Promoter cloning plasmid vector using expression of tetracycline resistance for selection. Constructed by inserting an oligonucleotide containing an *EcoRI* site into the *HindIII* site of pBR316, inactivating the *tet* promoter. Resistant to low levels of tetracycline without an insert and can be used to clone only strong promoters. Rodriguez, R.L.; Denhardt, D.T., eds. Vectors: A survey of molecular cloning vectors and their uses. Boston: Butterworth; 1988:pp. 153-177; Gene (Amst.) 7: 271-288, 1979. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* RR1.
- pBRH4** (plasmid)  
37071 R.L. Rodriguez. Construction: pBR322. Size(kb): 4. Marker(s): Amp<sup>r</sup>. Cloning sites: *EcoRI*. Replicon(s): pMB1. Promoter cloning plasmid vector using expression of tetracycline resistance for selection. Gene (Amst.) 7: 271-288, 1979. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* RR1.
- pBRM** (plasmid)  
37283 J.P. White. Construction: pBR322. Size(kb): 2. Marker(s): Amp<sup>r</sup>. Cloning sites: *BamHI* *EcoRI*. Replicon(s): pMB1. Proc. Natl. Acad. Sci. USA 79: 233-237, 1982. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli*.
- pBRN3** (plasmid)  
37137 D.B. Wilson. Construction: pBR322. Size(kb): 2. Marker(s): Amp<sup>r</sup>. Cloning sites: *HindIII* *EcoRI* *BglII* *PstI*. Replicon(s): pMB1. A general purpose plasmid vector useful for construction of shuttle vectors for animal cells. Deletion includes poison sequences near the origin of replication. A pBR322 deletion from near bp 50 to near bp 2400. Plasmid 7: 287-289, 1982. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* K-12 SK2284.
- pBRN/B** (plasmid)  
37348 M.M. Haltiner. Construction: pBR322. Size(kb): 3.3. Marker(s): Amp<sup>r</sup>. Cloning sites: *BglII* *NruI* *PstI* *EcoRI* *SalI* *BamHI* *Clal* *EcoRV* *HindIII* *NdeI* *PvuI* *SnaI* *SphI* *TthI* *XmaI*. Replicon(s): pMB1. Plasmid vector for use in generating nested sets of deletion mutations. Contains a linker cassette sequence containing *NruI* and *BglII* sites adjacent to each other. Nucleic Acids Res. 13: 1015-1025, 1985. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* HB101.
- pBRN/S** (plasmid)  
37347 M.M. Haltiner. Construction: pBR322. Size(kb): 3.3. Marker(s): Amp<sup>r</sup>. Cloning sites: *SacI* *NruI* *PstI* *EcoRI* *SalI* *BamHI* *Clal* *EcoRV* *HindIII* *NdeI* *PvuI* *SnaI* *SphI* *TthI*

**pCM4 (plasmid)**

- 37174 R.L. Rodriguez. Construction: pBR327, Tn9 *cml*. Size(kb): 4.2. Marker(s): Amp<sup>r</sup>. Replicon(s): pMB1. Contains promoterless CAT gene flanked by *Bam*HI sites which can be used to construct other vectors. Gene (Amst.) 20: 305-316, 1982. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* RR1.

**pCM7 (plasmid)**

- 37173 R.L. Rodriguez. Construction: pBR327, Tn9 *cml*. Size(kb): 4.2. Marker(s): Amp<sup>r</sup>. Replicon(s): pMB1. Contains promoterless CAT gene flanked by *Hind*III sites which can be used to construct other vectors. Gene (Amst.) 20: 305-316, 1982. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* RR1.

**pcos1EMBL (cosmid)**

- 37568 A. Craig. Construction: R6K, pcos4EMBL. Size(kb): 6.3. Marker(s): Kan<sup>r</sup>, Tet<sup>r</sup>. Cloning sites: *Bam*HI. Replicon(s): R6K. One of a family of cosmid vectors (ATCC 37568-37571) containing a R6K origin. Contains one  $\lambda$  *cos* site. Gene (Amst.) 57: 229-237, 1987. (Medium 1273 37C) **Shipped:** in freeze-dried *Escherichia coli* DH1.

**pcos2EMBL (cosmid)**

- 37569 A. Craig. Construction: pcos1EMBL. Size(kb): 6.1. Marker(s): Kan<sup>r</sup>, Tet<sup>r</sup>. Cloning sites: *Bam*HI. Replicon(s): R6K. One of a family of cosmid vectors (ATCC 37568-37571) containing a R6K origin. Differs from pcos1EMBL (ATCC 37568) in having 2  $\lambda$  *cos* sites and a deletion in the region of the Kan<sup>r</sup> gene. Gene (Amst.) 57: 229-237, 1987. (Medium 1273 37C) **Shipped:** in freeze-dried *Escherichia coli* DH1.

**pcos5EMBL (cosmid)**

- 37570 A. Craig. Construction: pcos3EMBL. Size(kb): 6. Marker(s): Kan<sup>r</sup>. Cloning sites: *Bam*HI. Replicon(s): R6K. Contains MCS. One of a family of cosmid vectors (ATCC 37568-37571) containing a R6K origin. Differs from pcos3EMBL in having *Not*I sites flanking the *Bam*HI cloning site. Gene (Amst.) 57: 229-237, 1987. (Medium 1236 37C) **Shipped:** in freeze-dried *Escherichia coli* DH1.

**pcos6EMBL (cosmid)**

- 37571 A. Craig. Construction: pcos5EMBL, Pi. Size(kb): 6. Marker(s): Kan<sup>r</sup>. Cloning sites: *Bam*HI. Replicon(s): R6K. Contains MCS. One of a family of cosmid vectors (ATCC 37568-37571) containing a mutated R6K origin for increased copy number. Has increased copy number over pcos5EMBL (ATCC 37570). Gene (Amst.) 57: 229-237, 1987. (Medium 1236 37C) **Shipped:** in freeze-dried *Escherichia coli* DH1.

**pCRI (plasmid)**

- 37135 D.R. Helinski. Construction: ColE1. Size(kb): 11.4. Marker(s): Kan<sup>r</sup>. Cloning sites: *Eco*RI *Hind*III. Replicon(s): ColE1. A general purpose plasmid vector. Science (Washington, DC) 196: 172-174, 1977. (Medium 1236 37C) **Shipped:** in freeze-dried *Escherichia coli* C600.

**pCS3 (plasmid)**

- 39142 Cetus Corporation. Construction: pEW27, pOP9. Marker(s): Amp<sup>r</sup>, Tet<sup>r</sup>. Cloning sites: *Eco*RI *Pvu*II *Pst*I *Pvu*I *Cl*aI *Hind*III *Sph*I *Sac*I *Bam*HI *Nru*I. Replicon(s): ColE1. Gives high copy number at high temperature. Contains the replication origin for high copy number at high temperature of pEW27 (ATCC 37124). pOP9 was constructed by cloning the *Eco*RI/*Pvu*II fragment containing the origin of pOP6 into pBR322. This should NOT be grown over 30°C; it is best between 28-30°C. U.S. Patent No. 4,677,064 dated June 30, 1987; Proc. Natl. Acad. Sci. USA 79: 3570-3574, 1982. Note: This material is cited in a U.S. and/or other Patent and may not be used to infringe the patent claims. (Medium 1227 28C) **Shipped:** in freeze-dried *Escherichia coli* MM294.

**pD553 (plasmid)**

- 37284 D.J. Drahos. Construction: pKO3,  $\lambda$ . Marker(s): Amp<sup>r</sup>. Cloning sites: *Eco*RI *Hind*III *Hpa*I. Replicon(s): pMB1. Terminator:  $\lambda$  *t*LI. Plasmid containing antiterminating  $\lambda$  gene N and *nut* L site. Gene (Amst.) 16: 261-274, 1981. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* C600 *galK*<sup>-</sup>.

**pDG141 (plasmid)**

- 39588 Cetus Corporation. Other names: CMCC 1966. Construction: pBR322. Size(kb): 2.5. Marker(s): Amp<sup>r</sup>. Cloning sites: *Sac*I. Replicon(s): pMB1. Promoter(s): *trp*.

Expression vector with a tryptophan promoter-operator and ribosome binding site operably linked with an ATG start codon. U.S. Patent No. 4,889,818 dated Dec. 26, 1989; U.S. Patent No. 4,711,845 dated Dec. 12, 1987; U.S. Patent No. 4,784,949 dated Nov. 15, 1988. Note: This material is cited in a U.S. and/or other Patent and may not be used to infringe the patent claims. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli*.

**pDM1 (plasmid)**

- 37357 D. Mead. Construction: bacteriophage f1, pAT153. Size(kb): 3.8. Marker(s): Amp<sup>r</sup>. Replicon(s): pMB1. Contains an easily isolated f1 intergenic region for conversion of any plasmid to an ssDNA vector (use *Sac*II plus *Acc*I plus *Hinc*II). Nucleic Acids Res. 13: 1103-1118, 1985. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* NM522.

**pDR42 (plasmid)**

- 37180 G.N. Bennett. Construction: pBR322, *Escherichia coli trp*. Size(kb): 4.4. Marker(s): Amp<sup>r</sup>, Tet<sup>r</sup>. Cloning sites: *Pst*I *Eco*RI *Hind*III *Bam*HI *Sac*I. Replicon(s): pMB1. A pBR322 derivative with increased tetracycline resistance and increased fusaric acid sensitivity. Hybrid *trp-tet* promoter formed by insertion of partial *trp* promoter at the *Cl*aI site. Plasmid 7: 290-293, 1982. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* RR1.

**pDR540 (plasmid)**

- 37282 G.N. Bennett. Construction: pKO1, *Escherichia coli trp-lac* fusion promoter *tac*. Marker(s): Amp<sup>r</sup>, *galK*<sup>-</sup>. Replicon(s): pMB1. Promoter(s): *tac*. Contains an easily purifiable *trp-lac* hybrid promoter which can be used to construct expression vectors. Unstable when transformed into C600 *galK*<sup>-</sup>. Gene (Amst.) 20: 231-243, 1982. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* JM103.

**pEA300 (plasmid)**

- 37181 E. Amann. Construction: pKK84-1, *ptrp*H1. Size(kb): 5.5. Marker(s): Amp<sup>r</sup>. Cloning sites: *Eco*RI *Cl*aI *Hind*III *Bam*HI *Pvu*II. Replicon(s): pMB1. Promoter(s): *trp*. Terminator: *rrnB*. For construction of -35 *trp* expression vectors. Constructed by inserting a 192 bp fragment-containing the -35 sequence of the *trp* promoter into the *Cl*aI site of pKK84-1. Contains two terminators tandemly arranged. Maniatis, T. et al., eds. Molecular cloning: a laboratory manual. Cold Spring Harbor, NY: CSHL, 1982; pp. 413-446; Gene (Amst.) 25: 167-178, 1983. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* W3110 *lacI*<sup>q</sup>.

**pEMBL8<sup>+</sup> (phagemid)**

- 37396 G. Cesareni. Construction: pUC8, bacteriophage f1. Size(kb): 3.99. Marker(s): Amp<sup>r</sup>. Cloning sites: *Eco*RI *Ava*I *Sma*I *Xma*I *Bam*HI *Sac*I *Acc*I *Pst*I *Hind*II *Hind*III *Cl*aI *Eco*B *Nae*I. Replicon(s): pMB1, f1. Contains MCS. ssDNA-producing plasmid with polylinker in *lacZ'*. Nucleic Acids Res. 11: 1645-1655, 1983. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* K-12 71/18.

**pEMBL8<sup>-</sup> (plasmid)**

- 37397 G. Cesareni. Construction: pUC8, bacteriophage f1. Size(kb): 3.99. Marker(s): Amp<sup>r</sup>. Cloning sites: *Eco*RI *Ava*I *Sma*I *Xma*I *Bam*HI *Sac*I *Acc*I *Pst*I *Hind*II *Hind*III *Cl*aI *Eco*B *Nae*I. Replicon(s): pMB1, f1. Contains MCS. ssDNA-producing plasmid with polylinker in *lacZ'*. Nucleic Acids Res. 11: 1645-1655, 1983. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* K-12 71/18.

**pEMBL9 (plasmid)**

- 37395 G. Cesareni. Construction: pUC9, pEMBL8, *lacZ*. Size(kb): 3.99. Marker(s): Amp<sup>r</sup>. Cloning sites: *Eco*RI *Sma*I *Bam*HI *Sac*I *Ava*I *Pst*I *Hind*III. Contains MCS. ssDNA-producing plasmid with polylinker in *lacZ'*. Nucleic Acids Res. 11: 1645-1655, 1983; Gene (Amst.) 35: 27-32, 1985. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* K-12 71/18.

**pEMBL18-Not (Sma-) (plasmid)**

- 37573 A. Craig. Construction: pEMBL18. Size(kb): 3.9. Marker(s): Amp<sup>r</sup>. Cloning sites: *Eco*RI *Sac*I *Kpn*I *Not*I *Bam*HI *Sac*I *Pst*I *Sph*I *Hind*III. Replicon(s): pMB1. Promoter(s): *lac*. Contains MCS. General purpose vector modified to include a *Not*I site to facilitate library construction and chromosome walking. *Sma*I site in polylinker of pEMBL18 changed to a *Not*I site. Gene (Amst.) 57: 229-237, 1987. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* JM101.

# VECTORS

## pLA7 (plasmid)

37281 I.R. Beacham. Construction: pCB1, pBR322. Size(kb): 4.1. Marker(s): Amp<sup>r</sup>, *ush*. Cloning sites: *Bcl*I *Ava*I. Replicon(s): pMB1. A positive selection vector for cloning *Sau*3AI-generated DNA fragments. Growth of the plasmid in a *dam*<sup>-</sup> host is necessary for *Bcl*I cleavage. Gene (Amst.) 27: 323-325, 1984. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* GM33.

## pLG200 (plasmid)

37113 L.P. Guarente. Construction: pBR322, *Escherichia coli*. Size(kb): 8.9. Marker(s): Amp<sup>r</sup>. Cloning sites: *Hind*III. Replicon(s): pMB1. Promoter(s): *lacUV5*. Can be used to construct a plasmid which directs the expression of a cloned gene under the control of the *lacUV5* promoter. Cell 20: 543-553, 1980. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* LG90.

## pLG338 (plasmid)

37130 N.G. Stoker. Construction: pSC105. Size(kb): 7.3. Marker(s): Kan<sup>r</sup>, Tet<sup>r</sup>. Cloning sites: *Kpn*I *Eco*RI *Xho*I *Sma*I *Bam*HI *Hinc*II/*Sal*I. Replicon(s): pSC101. A low copy number (6-8 per chromosome), general purpose plasmid vector. Gene (Amst.) 18: 335-341, 1982. (Medium 1273 37C) **Shipped:** in freeze-dried *Escherichia coli* C600.

## pLG339 (plasmid)

37131 N.G. Stoker. Construction: pSC105. Size(kb): 6.3. Marker(s): Kan<sup>r</sup>, Tet<sup>r</sup>. Cloning sites: *Pvu*II *Eco*RI *Xho*I *Sma*I *Bam*HI *Sph*I *Hinc*II/*Sal*I. Replicon(s): pSC101. A low copy number (6-8 per chromosome), general purpose plasmid vector. Gene (Amst.) 18: 335-341, 1982. (Medium 1273 37C) **Shipped:** in freeze-dried *Escherichia coli* C600.

## pLG400 (plasmid)

37114 L.P. Guarente. Construction: pBR322, *Escherichia coli*. Size(kb): 8.9. Marker(s): Amp<sup>r</sup>. Cloning sites: *Hind*III *Bam*HI. Replicon(s): pMB1. Promoter(s): *lacUV5*. Can be used to construct a plasmid which directs the expression of a cloned gene under the control of the *lacUV5* promoter. Cell 20: 543-553, 1980. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* LG90.

## pLKC480 (plasmid)

37594 A.A. Tiedman. Construction: A *lacZY* plasmid, Tn5. Size(kb): 9.9. Marker(s): Amp<sup>r</sup>, Kan<sup>r</sup>. Cloning sites: *Eco*RI *Bam*HI *Sal*I *Hind*III. Replicon(s): pMB1. Contains MCS. One of a series of *lacZY* fusion vectors (ATCC 37594-37596) that allow fusions in one of three reading frames and retain flanking DNA for homologous recombination into the *Escherichia coli* genome. The 6.3 kb *lacZY*-Kan<sup>r</sup> cassette is released with *Sma*I. A 1.3 kb *Hind*III/*Nru*I Kan<sup>r</sup> fragment (with *Hind*III site filled in) was inserted at the *Nru*I site of a *lacZY* fusion plasmid. Nucleic Acids Res. 16: 3587, 1988. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* TX528.

## pLKC481 (plasmid)

37595 A.A. Tiedman. Construction: A *lacZY* plasmid, Tn5. Size(kb): 9.9. Marker(s): Amp<sup>r</sup>, Kan<sup>r</sup>. Cloning sites: *Eco*RI *Bam*HI *Sal*I *Hind*III. Replicon(s): pMB1. Contains MCS. One of a series of *lacZY* fusion vectors (ATCC 37594-37596) that allow fusions in one of three reading frames and contain flanking DNA for homologous recombination into the *Escherichia coli* genome. The 6.3 kb *lacZY*-Kan<sup>r</sup> cassette is released with *Sma*I. A 1.3 kb *Hind*III/*Nru*I Kan<sup>r</sup> fragment (with *Hind*III site filled in) was inserted at the *Nru*I site of a *lacZY* fusion plasmid. Nucleic Acids Res. 16: 3587, 1988. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli*.

## pLKC482 (plasmid)

37596 A.A. Tiedman. Construction: A *lacZY* plasmid, Tn5. Size(kb): 9.9. Marker(s): Amp<sup>r</sup>, Kan<sup>r</sup>. Cloning sites: *Eco*RI *Bam*HI *Sal*I *Hind*III. Replicon(s): pMB1. Contains MCS. One of a series of *lacZY* fusion vectors (ATCC 37594-37596) that allow fusions in one of three reading frames and retain flanking DNA for homologous recombination into the *Escherichia coli* genome. The 6.3 kb *lacZY*-Kan<sup>r</sup> cassette is released with *Sma*I. A 1.3 kb *Hind*III/*Nru*I Kan<sup>r</sup> fragment (with *Hind*III site filled in) was inserted at the *Nru*I site of a *lacZY* fusion plasmid. Nucleic Acids Res. 16: 3587, 1988. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* TX528.

## pLM0.8 (plasmid)

39604 Actagen, Inc. Marker(s): Amp<sup>r</sup>. Note: This material is cited in a U.S. and/or other Patent and may not be used to infringe the patent claims. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* HB101.

## pLV57 (plasmid)

37177 D. O'Connor. Construction: pBR325, NTP14m07(Ts). Size(kb): 6.1. Marker(s): Amp<sup>r</sup>, Cml<sup>r</sup>, *Eco*RI m(Ts)r<sup>+</sup>. Cloning sites: *Hind*III *Bgl*II *Ava*I *Eco*RI. Replicon(s): pMB1. Positive selection cloning vector employing *Eco*RI restriction-modification system. Gene (Amst.) 20: 219-229, 1982. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* HB101.

## pLV59 (plasmid)

37178 D. O'Connor. Construction: pACYC184, NTP14m(Ts). Size(kb): 6.3. Marker(s): Cml<sup>r</sup>, *Eco*RI m(Ts)r<sup>+</sup>, Tet<sup>r</sup>. Cloning sites: *Hind*III *Bgl*II *Pst*I *Bam*HI *Eco*RI *Sal*I/*Hinc*II *Hinc*II. Replicon(s): p15A. Positive selection cloning vector employing *Eco*RI restriction system. Gene (Amst.) 20: 219-229, 1982. (Medium 1675 37C) **Shipped:** in freeze-dried *Escherichia coli* HB101.

## pMAM17 (plasmid)

37325 B. Polisky. Construction: pPLc236, ColE1 rop. Size(kb): 3.01. Marker(s): Amp<sup>r</sup>. Cloning sites: *Eco*RI *Bam*HI *Hind*III *Pvu*II. Replicon(s): ColE1. Promoter(s):  $\lambda$ PL. Expression vector that permits positive selection of DNA inserts; also permits high level temperature-induced expression of inserted DNA as fusion protein. Gene (Amst.) 31: 155-164, 1984. (Medium 1227 30C) **Shipped:** in freeze-dried *Escherichia coli* K-12  $\Delta$ H1  $\Delta$ trp.

## pMB9 (plasmid)

37019 H. Boyer — F. Bolivar. Construction: pMB8, pSC101. Size(kb): 5.2. Marker(s): Tet<sup>r</sup>. Cloning sites: *Bam*HI *Hind*III *Sal*I *Eco*RI. Replicon(s): pMB1. A general purpose plasmid vector. Gene (Amst.) 2: 75-93, 1977. (Medium 1273 37C) **Shipped:** in freeze-dried *Escherichia coli* HB101.

## pmF7 (cosmid)

37117 M. Feiss. Construction: pBR322,  $\lambda$ . Size(kb): 6.8. Marker(s): Amp<sup>r</sup>. Cloning sites: *Eco*RI *Sal*I. Replicon(s): pMB1. A general purpose cosmid vector. Gene (Amst.) 17: 123-130, 1982; Proc. Natl. Acad. Sci. USA 79: 3498-3502, 1982. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* K-12 IC202.

## pmF517 (cosmid)

37118 M. Feiss. Construction: pBR322,  $\lambda$ . Size(kb): 7.1. Marker(s): Amp<sup>r</sup>. Cloning sites: *Clal* *Hind*III *Sal*I *Pst*I *Eco*RI. Replicon(s): pMB1. A general purpose cosmid vector. Gene (Amst.) 17: 123-130, 1982; Proc. Natl. Acad. Sci. USA 79: 3498-3502, 1982. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* K-12 IC202.

## pmH621 (plasmid)

31775 NCI-Frederick Cancer Research Center. Size(kb): 7.6. Marker(s): Amp<sup>r</sup>. Cloning sites: *Bgl*II. Replicon(s): pMB1. Promoter(s): *ompF*. An expression vector for cytoplasmic export of a cloned gene product. Maniatis, T.; *et al.*, eds. Molecular cloning: A laboratory manual. Cold Spring Harbor, NY: CSHL; 1982:pp. 429-430. Note: This material is cited in a U.S. and/or other Patent Application and may not be used to infringe the patent claims. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* K-12 MH2000.

40038 NCI-Frederick Cancer Research Center. Size(kb): 7.6. Marker(s): Amp<sup>r</sup>. Cloning sites: *Bgl*II. Replicon(s): pMB1. Promoter(s): *ompF*. An expression vector for cytoplasmic export of cloned gene product by formation of a fusion protein with the *ompF* signal sequence. Requires as host MH3000 (ATCC 35468) for viability and TK 1046 (ATCC 35467) for protein expression. Note: This material is cited in a U.S. and/or other Patent Application and may not be used to infringe the patent claims. **Shipped:** as thawed purified plasmid DNA, supplied by depositor.

## pMLB1034 (plasmid)

37222 M.L. Berman. Construction: pMC871, pBR322. Size(kb): 7.2. Marker(s): Amp<sup>r</sup>. Cloning sites: *Bam*HI *Eco*RI *Sma*I. Replicon(s): pMB1. Contains MCS. For screening promoters by determining  $\beta$ -galactosidase activity (*lacZ*). The cloning sites are 5' to a promoterless  $\beta$ -galactosidase gene. The insert

## EUKARYOTIC GENES CLONED AND EXPRESSED PRIOR TO MARCH 19, 1980

	Gene	Reference	System
MAMMALIAN GENE: $\beta$ -GALACTOSIDASE EXPRESSION SYSTEM			
1	human somatostatin	Itakura et al. (1977)	$\beta$ -gal promoter
2	chicken ovalbumin	Fraser et al. (1978) Mercereau et al. (1978)	$\beta$ -gal promoter
3	mature human insulin	Goeddel et al. (1979a)	$\beta$ -gal promoter
MAMMALIAN GENE: $\beta$ -LACTAMASE EXPRESSION SYSTEM (Inserted into PstI site of pBR322)			
4	rat preproinsulin	Villa-Komaroff (1978)	<i>bla</i> promoter
5	mouse dihydrofolate reductase	Chang et al. (1978)	<i>bla</i> promoter
6	rat pregrowth hormone	Seeburg et al. (1978)	<i>bla</i> promoter
MAMMALIAN GENE: <i>TRP D</i> EXPRESSION SYSTEM			
7	human pregrowth hormone	Martial et al. (1979)	<i>trp</i> promoter
MAMMALIAN GENE: <i>LAC</i> PROMOTER			
8	human mature growth hormone	Goeddel et al. (1979b)	<i>lac</i> promoter <sup>1</sup>
MAMMALIAN GENE: OTHER			
9	human globin	Wilson et al. (1979)	...
VIRAL GENE (Genes which are expressed normally by infected eukaryotic hosts)			
10	simian virus 40 t antigen	Roberts et al. (1979)	<i>lac</i> promoter <sup>2</sup>
11	human hepatitis B virus	Burrell et al. (1979)	<i>bla</i> promoter
12	fowl plague virus	Emtage et al. (1980)	<i>trp</i> promoter Insert at pBR322 HindIII
YEAST GENE			
13	Neurospora dehydroquinolate hydrolase	Vapnek et al. (1977)	Insert at pBR322 HindIII/EcoRI
14	Saccharomyces <i>His</i> and <i>Leu</i>	Ratzkin et al. (1977)	ColEI plasmid
15	Saccharomyces galactokinase	Schell et al. (1979)	Insert at pBR322 BamHI
16	Saccharomyces OMP decarboxylase	Bach et al. (1979)	Insert at pBR322 HindIII

Key:  $\beta$ -gal =  $\beta$ -galactosidase gene  
*bla* =  $\beta$ -lactamase gene

*trp* = tryptophan operon  
*lac* = lactose operon

<sup>1</sup> System subsequently used by Goeddel et al. (Nucleic Acids Research, Vol. 8, No. 18, pp. 4057-4074 (1980)), to express IFN- $\beta$ .

<sup>2</sup> System subsequently used by Taniguchi et al. (PNAS, 77:5230-5233 (September 1980)), to express IFN- $\beta$ .

### LIST OF CITES

1. Itakura et al., Science, 198:1056-1063 (December 1977)
2. Fraser et al., PNAS, 75:5936-5940 (December 1978)  
Mercereau-Puijalon et al., Nature, 275:505-510 (October 12, 1978)
3. Goeddel et al., PNAS, 76:106-110 (January 1979a)
4. Villa-Komaroff et al., PNAS 75:3727-3731 (August 1978)
5. Chang et al., Nature, 275:617-624 (October 19, 1978)
6. Seeburg et al., Nature, 276:795-798 (December 21/28, 1978)
7. Martial et al., Science, 205:602-607 (August 1979)
8. Goeddel et al., Nature, 281:544-548 (October 18, 1979b)
9. Wilson et al., PNAS, 76:5631-5635 (1979)
10. Roberts et al., PNAS, 76:5596-5600 (November 1979)
11. Burrell et al., Nature, 279:43-47 (May 3, 1979)
12. Emtage et al., Nature, 283:171-174 (January 10, 1980)
13. Vapnek et al., PNAS, 74:3508-3512 (August 1977)
14. Ratzkin et al., PNAS, 74:487-491 (February 1977)
15. Schell et al., Gene, 5:291-303 (1979)
16. Bach et al., PNAS, 76:386-390 (January 1979)